

**AMENDMENTS TO THE SPECIFICATION:**

Please replace paragraph [0010] with the following paragraph as follows:

[0010] The method disclosed in Japanese Laid-Open Patent Publication No. 2002-175534 also has a problem that it is difficult to extract, as an edge portion, a portion having small gradation difference such as a thin ~~like~~ line existing in an input image of which portions mostly have large gradation difference.

Please replace paragraph [0038] with the following paragraph as following:

[0038] Thereafter, CPU 101 performs a smoothing process on the edge image EI (x, y) formed in step S3, to form an edge smoothed image EHI (x, y) (S4). In step S4, the edge smoothed image EHI (x, y) is formed by using an average filter. Specifically, a method represented by Equation (5) below using an average filter of 7 pixels × 7 pixels is used.

$$\cancel{EHI(x,y)} = \frac{1}{49} \begin{pmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{pmatrix} \times \cancel{GI(x,y)} \quad \dots(5)$$

$$EHI(x,y) = \frac{1}{49} \begin{pmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 & 1 \end{pmatrix} \times EI(x,y) \quad \dots(5)$$


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